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# of Engelmann Spruce and Subalpine Fir

by Frank Ronco

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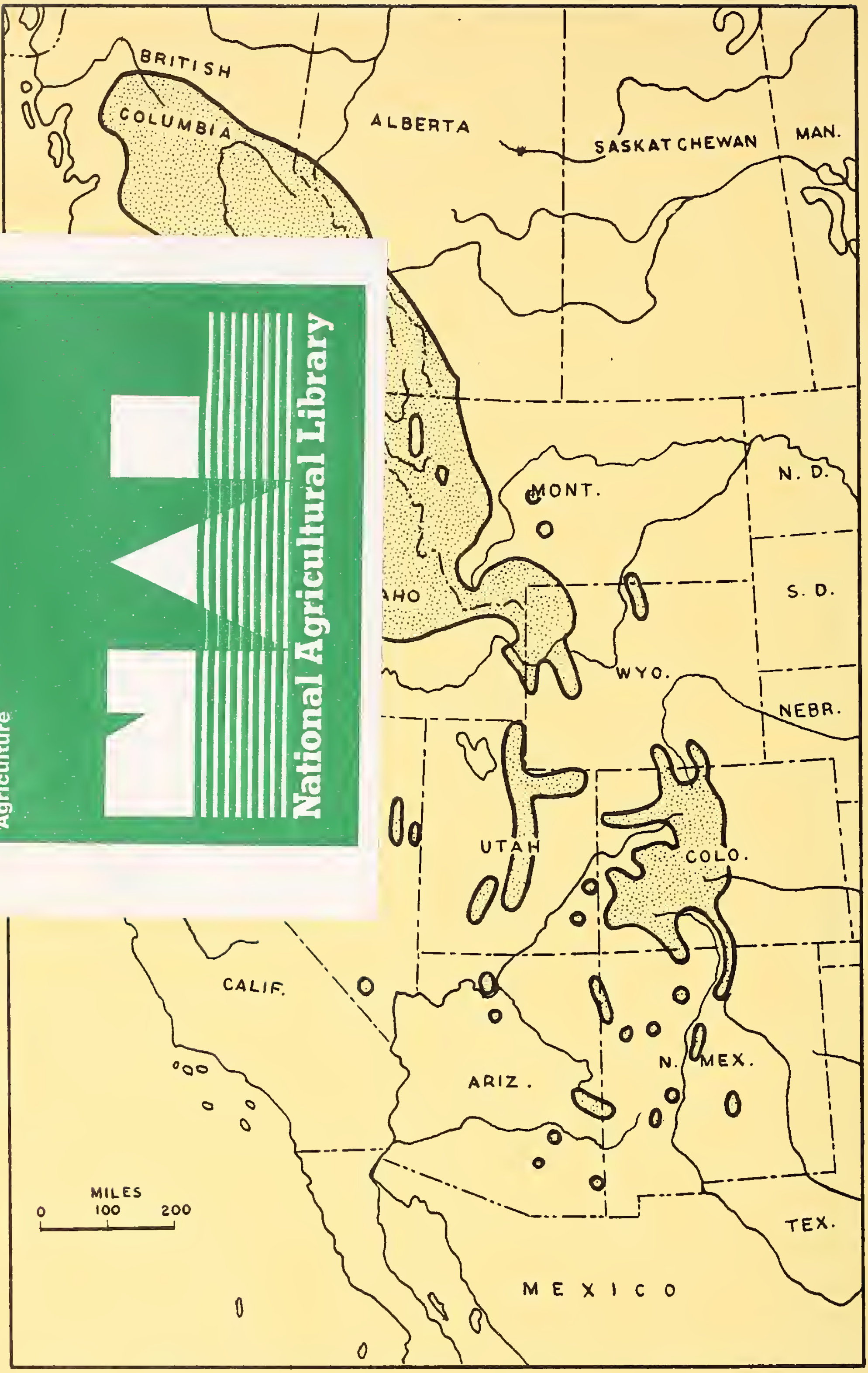

THE NATURAL RANGE OF SUBALPINE FIR

(From "Silvical characteristics of subalpine fir" by R. R. Alexander. Station Paper 32, U. S. Forest Service, Rocky Mountain Forest and Range Experiment Station, April 1958.)

Station Paper No. 57 March 1961

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Frank Ronco, Research Forester

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BIBLIOGRAPHY OF ENGELMANN SPRUCE AND SUBALPINE FIR

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INTRODUCTION

This bibliography covers literature pertaining to Engelmann spruce (*Picea engelmannii* Parry) and subalpine fir (*Abies lasiocarpa* (Hook.) Nutt.) management.

In the western United States and Canada, the two species form the extensively distributed Engelmann spruce-subalpine fir type of the boreal forest zone. Subalpine fir is also a major component of the mountain hemlock (*Tsuga mertensiana* (Bong.) Carr.) - subalpine fir type. Both species mix in varying degrees with several adjoining forest types.

Although both varieties of subalpine fir are included in this publication, they have not been separately indexed. The typical variety (*Abies lasiocarpa* var. *lasiocarpa*) is widely distributed in contrast with corkbark fir (*Abies lasiocarpa* var. *arizonica* (Merriam) Lemm.), which is limited to southern Colorado, New Mexico, and northeastern Arizona.

Among the more frequently encountered common names for Engelmann spruce are: silver spruce, balsam, and spruce. It has also been called mountain spruce, white spruce, red spruce, Arizona spruce, Columbian spruce, and white pine. Some of the more widely used names for subalpine fir are: alpine fir, balsam fir, balsam, and white fir (lumber). Other designations found in the literature were mountain fir, white balsam, mountain balsam, Oregon balsam tree, pumpkin tree, down-cone fir, downy-cone sub-alpine fir, Skwe-whe-alp (from the Piskwaus Indian dialect of the Pacific Northwest), and pino real blanco de Las Sierras. Another common name for corkbark fir is alamo de la sierra.

SCOPE

The bibliography covers only American and Canadian literature published through 1959. Because it was intended as a working tool for forest managers, wood utilization, wood chemistry, and other subjects are not covered completely. Coverage of entomological and pathological references was limited to material pertaining to host trees. Printed and processed references were included, but unpublished manuscripts, theses, and typewritten reports were not.

Many articles have been published on white spruce (Picea glauca (Moench) Voss) and western white spruce (Picea glauca var. albertiana (S. Brown) Sarg.) growing under subalpine conditions. Because of the tendency of Engelmann spruce and white spruce to hybridize in the western provinces of Canada, those references may be useful and applicable. However, they are not included in this bibliography, which is limited to Engelmann spruce.

SUBJECT INDEX

No attempt was made to index each publication under all the subject matter it might contain. Publications were cataloged only under what was considered the principal topics, but none were listed more than four times.

Articles containing more than four related topics of importance, generalized articles, and articles containing topics having no index headings were listed under the next larger index heading. For example, an article of a generalized silvicultural nature or composed of silviculturally related topics will be found under the primary heading of "Silviculture." Or, if the article is narrower in scope and is more specialized, it might be listed under a secondary heading such as "Silviculture - reproduction methods."

Publications containing many unrelated topics that are given approximately equal emphasis are listed under "Monographs" or "Handbooks."

ACKNOWLEDGMENTS

Acknowledgment is made first to David Tackle and D. I. Crossley[1] and to Arthur L. Roe and Kenneth N. Boe[2] whose bibliographies served as a guide and whose Subject Indexes were combined to form the Subject Index of this publication.

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[1] Authors of Lodgepole Pine Bibliography. U. S. Forest Serv., Intermountain Forest and Range Expt. Sta. Res. Paper 30, 57 pp., illus., 1953.

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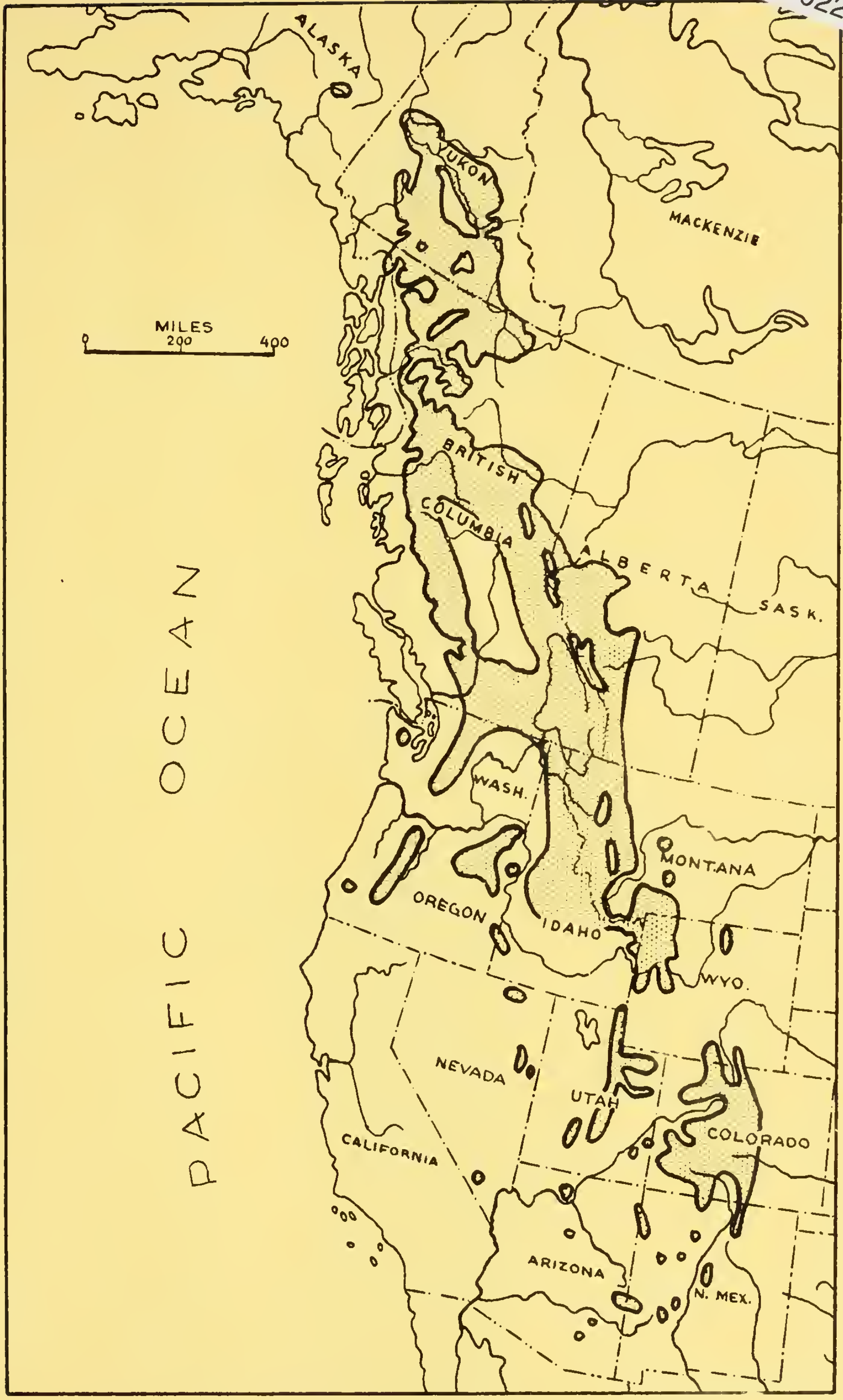

THE NATURAL RANGE OF ENGELMANN SPRUCE

(From "Silvical characteristics of Engelmann spruce" by R. R. Alexander. Station Paper 31, U. S. Forest Service, Rocky Mountain Forest and Range Experiment Station, April 1958.)

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